NHS Scotland Assure
Quality in the healthcare environment

NHS National Services Scotland

NHS A&A National Secure Adolescent In-patient Services Key Stage Assurance Review

FBC KSAR Report

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Document Control Sheet

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1. Executive Summary

1.1 Executive Summary

Throughout the Key Stage Assurance Review (KSAR) it was apparent that NHS Ayrshire & Arran (A&A) have an excellent understanding of the patient cohort that will be hosted by the National Secure Adolescent Inpatient Services (NSAIS) facility and are looking to provide a bespoke facility that best meets their needs. We also commend the NHS A&A approach of consulting other facilities such as the State Hospital to help inform the key strategies for the facility and deliver the best possible care for the patients.

In our opinion, from the evidence that has been provided, the KSAR has identified a number of gaps within the project governance structure. The KSAR has also identified a number of significant technical issues. NHS Scotland Assure (SA) recommend that NHS A&A develop their action plan to mitigate risks identified.

NHS A&A provided anecdotal evidence of stakeholder engagement throughout the KSAR workshops, however there is a lack of documented evidence of key stakeholder engagement.

The KSAR identified conflicting requirements between briefing documents and the developed design, which in the absence of evidence of a documented governance process, make it difficult to determine if the current proposals meet with NHS A&A's requirements for the facility.

We note that a derogation schedule is in place, however, it is in our opinion, lacking supporting evidence to indicate review of these derogations and associated risks/mitigations, by the NHS A&A stakeholder group.

Due to the nature of the facility, patient & staff safety, as well as ligature reduction measures, have been identified as key drivers for the NSAIS building. The KSAR identified that a number of risk assessments in relation to these elements had not yet been undertaken and that the design team had not fully consulted the key stakeholder groups when making decisions.

NHS A&A have engaged with a number of their Authorising Engineers (AEs), however there was no evidence across all disciplines. It is also unclear from the evidence that has been provided whether the feedback from the Authorising Engineers has been fully incorporated into the Full Business Case (FBC) proposals.

We also note that NHS A&A have engaged with various members of their Water Safety Group (WSG), however this process, in our opinion, lacked a formal structure and as such there is no auditable evidence in place of full Water Safety Group review or approval of the proposed facility.

The current Principal Supply Chain Partner (PSCP) design proposals contain a number of Contractor Design Packages (CDP) that have not yet been developed to a RIBA Stage 4 level of detail (as required under SCIM guidance at FBC). There was no evidence provided as to how the development of the CDP will be monitored by NHS A&A, nor how the overall co-ordination of services will be managed.

The KSAR identified a number of points of concern with respect to the fire strategy and fire safety provisions of the facility. The fire strategy for the facility was still being developed at the commencement of the KSAR and was ultimately provided midway through the process. What was subsequently provided was a 'fire engineering report' and not a consolidated strategy document.

Our review of this report and other project documentation has highlighted a number of areas that in our opinion require further review by NHS A&A. The evidence that has been provided,

in our opinion, does not demonstrate compliance in full with required standards and guidance, nor does it demonstrate that in the event of a fire occupants can safely evacuate.

Specific areas of concern include where the final assembly point is situated and the route to allow occupants to reach this point, including how the locking strategy will be managed given the secure nature of the facility. The review identifies that at times, occupants may require to re-enter the building in the event of a fire prior to reaching a final point of safety.

NHS A&A noted during the KSAR workshops that a non-standard detail is currently proposed with respect to internal fire rated partitions. The proposed detail is not currently certified to the relevant British Standards (BS) and further tests are being undertaken to validate the fire performance of the detail and consequently whether it affords the appropriate level of fire protection in accordance with the fire strategy. It is unclear as to what impact this will have on the statutory approvals process.

There is a lack of evidence to demonstrate that the proposed fire/smoke damper installation will be in accordance with the manufacturers certified details.

As part of the KSAR, it was evident that a number of points within the design that are still subject to assumptions, such as the thermal modelling and electrical calculations. The KSAR has also identified a number of potential non-conformances within the design package that will require further review by NHS A&A, including ventilation air flow rates to treatment rooms and areas subject to overheating. There are also a number of co-ordination issues and inconsistencies between design packages that, in our opinion, should be addressed prior to commencement of the project construction phase.

NHS A&A's construction requirements note the importance of maintaining continuity of service to adjacent facilities. The infrastructure works to NSAIS have a number of interdependencies with existing mechanical & electrical plant, including heating and electrical distribution plant. The current design proposals do not identify how isolations will be managed, nor how services to adjacent areas of the site will be maintained. The primary heat source is to be derived from the existing Central Decontamination Unit (CDU), however, there is a lack of supporting evidence as to how this will be developed, including validation of whether this strategy is feasible.

The KSAR has identified a number of inconsistencies between their construction requirements in relation to future expansion/spare infrastructure capacity with respect to the design proposals.

The review identified that the roof structure will be supported by timber trusses, the final design of which has yet to be completed. Whilst the sections through the building identify a clear zone through the trusses for a maintenance walkway, there is no evidence that a planned route is included for the routing of ventilation ductwork.

1.2 Summary of Findings

The findings of this report have been collated based on information that has been provided by NHS A&A. The following table outlines the status of key findings as derived from the KSAR and identified within the NHS SA Recommended Action Plan issued to NHS A&A under separate cover:

Review	No. of Issues per category				
	1	2	3	4	5
Project Governance and General Arrangements	-	4	14	12	-
Water and Internal Plumbing / Drainage Systems	-	4	12	10	1
Ventilation	1	3	17	13	4
Electrical	1	4	6	10	1
Medical Gases There are no piped medical gas systems in the development.	N/A	N/A	N/A	N/A	N/A
Fire	-	-	4	6	4
Infection Prevention & Control Built Environment	-	-	2	3	2

The following categories were used in relation to the findings:

Category	Definition
1	Significant – Concerns requiring immediate attention, no adherence with guidance
2	Major – Absence of key controls, major deviations from guidance
3	Moderate – Not all control procedures working effectively, elements of noncompliance with guidance
4	Minor – Minor control procedures lacking or improvement identified based on emerging practice
5	Observation and improvement activity

1.3 Project Overview

The building and its accompanying external spaces will provide a new National Secure Adolescent In-patient Service (NSAIS) that is located on NHS Ayrshire and Arran's (NHS A&A) existing Woodland View site, in Irvine.

The over-arching requirement of the development is to establish a 12 bed national unit, with the main areas/zones within this the development NSAIS to include:

- A small entrance hub and administrative area
- A staff area
- A visiting area
- Day, dining and local activity areas
- Patient bedroom areas (In 3 x blocks of 4 beds with Unit support & storage areas)
- Clinical support & consulting areas
- Group/therapy areas
- A school/further education/vocational training area
- Patient bedroom areas

The development will encompass all of the key KSAR topics with the exception of medical gas piped supplies.

2. Review Methodology

2.1 Overview of NHS Scotland Assure & the KSAR Process

Good management and effective control of projects is an essential element to the successful delivery and maintenance of healthcare facilities across NHS Scotland estates.

The NHS Scotland Assure - Assurance Service was launched on the 1st June 2021 following a letter issued by Scottish Government to Health Board Chief Executives, Directors of Finance, Nursing Directors and Directors of Estates. This letter outlined the purpose of NHS Scotland Assure, with an overarching aim to deliver a co-ordinated approach to the improvement of risk management in new builds and refurbishment projects across NHS Scotland. The new service will underpin a transformation in the approach to minimising risk in our healthcare buildings and environments, protecting patients from the risk of infection and supporting better outcomes for patients in Scotland.

From the 1st June 2021, all NHS Board projects that require review and approval from the NHS Capital Investment Group (CIG), will need to engage with NHS Scotland Assure to undertake key stage assurance reviews (KSARs). Approval from the CIG will only follow once the KSAR has been satisfactorily completed. The KSARs have been designed to provide assurance to the Scottish Government that guidance has been followed. The Scottish Government may also commission NHS Scotland Assure to undertake reviews on other healthcare built environment projects. This does not change accountability for the projects; NHS Boards remain accountable for their delivery. NHS Scotland Assure will be accountable for the services it provides that support delivery of the projects.

NHS Scotland Assure will also work closely with Health Boards to identify where a KSAR may be required for projects under their Delegated Authority, utilising a triage system to assess risk and complexity of projects.

The KSARs will assess if Health Boards Project Management teams (inclusive of clinicians, appointed construction consultants, and contractors) are briefed and following best practice procedures in the provision of facilities. We will review if projects have considered aspects of safety related to the KSAR topics, if specific engineering systems are designed, installed and commissioned, and for ongoing safety maintenance including Infection Prevention and Control (IPC).

The KSAR focuses on key topics, specifically – IPC, water, ventilation, electrical, plumbing, medical gases installations and fire. This ensures they are designed, installed and functioning from initial commissioning of a new facility and throughout its lifetime. Health Boards are required to have appropriate governance in place at all stages of the construction procurement journey.

The purpose of the KSAR at Full Business Case (FBC) stage is to confirm there is a good and comprehensive understanding of the category of patient who will use the proposed facility and that the project team consider how appropriate quality and safety standards will influence the design. It looks to provide assurance that the project can proceed to the Construction phase. Additionally, the KSAR at FBC will carry out an appropriate level of checking of the design solutions adopted and that calculations have been carried out.

Whilst the KSAR focusses on actions to improve the end product, it is not intended to detract from the merits of a development that will add significant benefit for the healthcare of the

population served, and which has many exemplary elements. Rather, it is a reflection of the complexity of healthcare construction projects and the stage of development at which it was reviewed. Some conflicts and changes are to be expected as complex projects develop and project teams have in place mechanisms to identify and address these. This report adds a layer of scrutiny and assurance to that process to address the above requirement from government.

2.2 KSAR Process

2.2.1 The FBC KSAR for NHS A&A NSAIS project took place between August 2021 and October 2021.

2.2.2 To inform the findings of the KSAR, the Health Board were issued with key documents outlining the assurance question set and expected level of evidence and supporting documents in accordance with relevant legislation and guidance. This included the FBC KSAR Workbook and FBC Deliverables list.

The KSAR report includes an overview of the main findings of the review, with a further itemised list of detailed observations that has been provided under separate cover to NHS A&A. The detailed observations are recorded in an action plan that should be adopted by the NHS A&A following the review and subsequently monitored by them to ensure appropriate actions are completed in a timeous manner.

2.2.3 As part of the KSAR process, NHS A&A issued a document transmittal log which details the evidence that has been provided in response to the KSAR Workbook and NHS SA recommended deliverables list. As part of an initial gap analysis, NHS SA reviewed the transmittal log to ensure all documents had been successfully received. The transmittal log provides a version history and audit trail of information reviewed.

2.3 Application of Standards & Legislation

2.3.1 Health Facilities Scotland (HFS) currently provides a range of advisory and delivery services across a wide variety of topics from a portfolio which covers the built estate, engineering and environment and facilities management. With some exceptions these services are largely advisory in nature, identifying best practice and developing national guidance and standards. This includes, amongst others, specific healthcare engineering guidance.

2.3.2 Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) Scotland currently provides advice and guidance on all aspects of infection protection and control nationally in Scotland, inclusive of expert advice and guidance on the topic of Healthcare Associated Infections (HAI) and antimicrobial resistance. It maintains and continues to develop a practice guide (National Infection Prevention and Control Manual – NIPCM) as well as a HAI Compendium of all extant guidance and policy appropriate for use in NHS Scotland. Like HFS, these services are largely advisory in nature, identifying best practice and developing national guidance and standards. The NHS Scotland NIPCM was first published on 13 January 2012 as mandatory guidance, by the Chief Nursing Officer (CNO (2012)1), and updated by a second edition on 17 May 2012 (CNO(2012)01-update). The NIPCM provides guidance for all those involved in care provision and should be adopted for infection, prevention and control practices and procedures. The NIPCM is mandatory policy for NHS Scotland.

The authority of guidance produced by National Services Scotland (NSS) and other national organisations e.g. Healthcare Improvement Scotland is best described by the definitions outlined below (SHTM 00 – Best practice guidelines for healthcare engineering):

Regulations are law, approved by Parliament. These are usually made under the Health and Safety at Work etc Act following proposals from the Health & Safety Commission. Regulations identify certain risks and set out specific actions which must be taken.

Approved Codes of Practice give advice on how to comply with the law by offering practical examples of best practice. If employers follow the advice, they will be doing enough to comply with the law.

Approved Codes of Practice have a special legal status. If employers are prosecuted for a breach of health and safety law, and it is proved that they did not follow the relevant provisions of an Approved Code of Practice, they will need to show that they have complied with the law in some other way, or a court will find them at fault.

Standards (British or European), institutional guides and industry best practice play a large part in how things should be done. They have no direct legal status (unless specified by Regulations). However, should there be an accident; the applied safety practices at the place of work would be examined against existing British or European Standards. It would be difficult to argue in favour of an organisation where safety was not to the described level.

Guidance is issued in some cases to indicate the best way to comply with Regulations, but the guidance has no legal enforcement status.

2.3.3 Whilst guidance is deemed not compulsory by the Health and Safety Executive (HSE), where compliance with guidance is specified in a contract, as is the case here, it becomes a contractual requirement. Therefore, any permitted deviation from it would be expected to follow a formal process with input from all relevant parties, with clarity around how the outcome was reached, including risk assessments where appropriate and sign off by all those authorised to approve it.

2.4 Project Technical Outline Summary

Water and electricity are sourced from the existing site infrastructure. Heat is to be derived from the steam boiler plant in the adjacent Central Decontamination Unit.

The mains water supply to the NSAIS building enters the facility from below ground within the new ground floor plant room. The mains water is then fed into a small break tank and booster set. From this, the water pipework splits into two, one line feeds external taps, whilst the other pipework line feeds into a filtration unit and then into a holding tank. The water from the holding tank then feeds two hot water calorifiers, whilst a separate line circulates cold water around the building to the outlets. The cold-water pipework has a return distribution system that passes back through a buffer/ chiller (to mitigate thermal pick up through the building). There is also an emergency water fill connection.

Above ground drainage is vented either to atmosphere at roof level or with air admittance valves.

Ventilation utilises mechanical, ducted systems in parts of the building with natural ventilation in others.

Heating for space, water and fresh air heating is derived initially from steam which in turn generates low temperature hot water (LTHW) via heat exchangers. Radiant panels deliver the heat to the spaces. Minimum room temperatures are controlled via local heating controls while peak space temperatures are controlled by the ventilation arrangements with local refrigerant driven cooling units used in a limited number of spaces.

The new NSAIS facility derives its electrical supply at low voltage from an existing substation on the site, utilising a spare way on an existing switchboard. The supply is routed from the substation to the new facility via underground ducts, which enter the new switch room within the NSAIS. The electrical supply feeds a new switchboard dedicated to the NSAIS building located within this new switch room.

A number of low voltage distribution boards are provided throughout the NSAIS, these in turn supply power, lighting and other miscellaneous supplies. Due to the nature of the facility, local electrical isolation points are provided to the bedrooms from a location outside of the room.

CCTV and access control are provided to the facility. Security is of paramount importance to the NSAIS and a staff call/attack system is also provided.

A structured cabling system is present; with two incoming communications ducted services provided to the facility, terminating in a new node room within the NSAIS building.

A life safety fire detection and alarm system (to the highest standard of British Standard 5839 (L1)) is provided to the facility, primarily consisting of point smoke or heat detection and local audible/visual alarms.

External lighting is also provided (around the perimeter, in the courtyards and the car park), with a focus on maintaining suitable illumination for safety & security purposes.

A lightning protection system and surge protection is also provided.

Routing of services plus the selection of terminal devices in patient areas, have been designed to reduce ligature risk.

3 KSAR Review Summary

The following narrative relates directly to the FBC KSAR workbook and the evidence indicated therein. The comments associated with the points are because of the evidence presented by the Board and their advisors during the review process.

3.1 Project Governance and General Arrangements

3.1.1 Project Governance and General Arrangements KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
1.1	Evaluation of changes detailed from previous KSAR.	Assessment of any substantive changes in highlighted areas from previous review stage and all actions have been implemented.
NHS Scotland Assure Observations: This is the first stage of review in the KSAR process, therefore no evidence was expected.		

Workbook Ref No.	Areas to probe	Evidence expected
1.2	Verification that CIG recommendations have been implemented with respect to prescribed in scope areas.	Review of the implementation of all CIG recommendations. Evaluation of any deviation from previous submissions or reviews.
NHS Scotland Assure Observations: The earlier recommendations are those generated via NDAP and are dealt with in 3.1.3 below. No evidence has been provided of any previous CIG recommendations therefore relevant compliance cannot be assured.		

Workbook Ref No.	Areas to probe	Evidence expected
1.3	Has cross-referencing with NDAP and AEDET recommendations been implemented?	An assessment if there is full compliance with the applicable recommendations and actions from the preceding step.
NHS Scotland Assure Observations: The topics that were previously recommended in the FBC NDAP report have in many cases not been incorporated into the design or at least their inclusion is not clear from the documentation submitted for review.		

Workbook Ref No.	Areas to probe	Evidence expected
1.4	Does the Health Board continue to demonstrate service / clinical input into design decisions based on a current and comprehensive knowledge of patient cohorts?	Recorded and updated input taken from service lead(s) / clinician(s) about relevant patient cohort characteristics and their typical needs in terms of the accommodation's environment, safety and infection control standards. Demonstrable expertise of service lead(s) / clinician(s) in providing this advice.
NHS Scotland Assure Observations: There is an absence of documented evidence for input throughout the design from the clinical team regarding design decisions.		

Workbook Ref No.	Areas to probe	Evidence expected
1.5	Project team continues to demonstrate a unified and recorded understanding of needs of main users and patient cohorts of the proposed accommodation and how this has influenced the design of critical building, engineering and infection prevention and control quality and safety standards.	Updated and current list available of all stakeholders, service users and patient cohorts impacted by this project, plus the identification of any high risk groups and their specialist needs. Updated and recorded engagement on these designs issues having taken place between the project team and service lead(s) / clinician(s), infection prevention and control team, and other key stakeholders (e.g. Estates, Medical Physics, IPC, the AEDET, NDAP or other design briefing workshops). Details available of how service users / patient cohort needs and their expected use of the accommodation are influencing the design brief; including critical building, engineering and infection prevention and control quality and safety standards.
NHS Scotland Assure Observations: It was apparent from the technical workshops that NHS A&A have a good understanding of the patient cohort and that significant consideration had been given to the needs of staff and patients alike within the design briefing information. NHS Scotland Assure also commend NHS A&A for engaging with other Health Boards and facilities to learn and influence the design for NSAIS, including input from The State Hospital security specialists. There is no list of stakeholders, service users or patient cohorts and the high risk groups are not identified. There is no updated and recorded evidence of engagement in the design from all parties. Through the KSAR workshops, NHS A&A discussed various technical and clinical working groups, however there was no auditable evidence to support how these groups had inputted to the decision making process or design sign-offs.		

Whilst the requirements of the clinical brief have generally been incorporated into the design, most of the evidence around project governance and stakeholder input is anecdotal.

For example, there is no formal ligature/harm risk assessment in place for the design, with a reliance on construction stage reviews to identify any potential issues and resolution. The may result in a significant time/cost/quality risk is transferred to the construction stage of the project and should any issues be identified, rectification of these could impact on the delivery of the project.

Workbook Ref No.	Areas to probe	Evidence expected
1.6	Planned approach towards determining the necessary standards for this accommodation.	Updated and current list of the relevant NHS and non-NHS guidance that is being used and adopted (see previous section of workbook FBC KSAR (Page 9) for examples of appropriate guidance). Updated and current list of all proposed derogations from NHS guidance with a detailed technical narrative on each derogation and/or list of known gaps in guidance that will need to be resolved in order to meet the needs of the patient / user cohort. Knowledge of the role of infection prevention and control advisors (IPCN and ICD) to be used throughout the final design stages, and details of the resource plan in place to ensure continuity into the construction phase.

NHS Scotland Assure Observations:

Some of the relevant guidance has been identified although other documents referenced are out of date.

A derogation list exists, however, there is no evidence of governance surrounding this process. There are no derogations signed off, an absence of detail as to who was involved in process, an absence of explanations as to why any derogation is deemed necessary in many cases and there are no electrical derogations identified.

The evidence presented as part of the KSAR response indicated that IPC teams had been consulted on a number of matters but not all key decisions. Whilst a number of working groups (including IPC representation) had been established, much of the evidence was anecdotal and not in an auditable format. There was no evidence of IPC or clinical sign-off of derogations or the FBC design, nor of an escalation process through the NHS A&A Board governance. There was also no evidence as to how IPC would be involved during the construction phase.

Workbook Ref No.	Areas to probe	Evidence expected
1.7	How does the Health Board demonstrate that there is an effective infection prevention and control management structure in place and how does it relate to the development of the project? How does the Health Board demonstrate leadership and commitment to infection prevention and control to ensure a culture of continuous quality improvement throughout the organisation and that there is an effective IPC structure in place and how does it relate to the design development?	Evidence IPC and clinical teams have been integrated into all decisions regarding any derogations through the design process and are satisfied this will not impact on patient safety such as, specific sign off, supporting meeting minutes, risk assessments, risk registers relating to IPC with evidence of escalation through the agreed NHS board governance process.
NHS Scotland Assure Observations: The evidence presented as part of the KSAR response indicated that IPC and clinical teams had been consulted on a number of matters but not all key decisions. As noted in previous sections, whilst a number of working groups (including IPC and clinical representation) had been established, much of the evidence was anecdotal and not in an auditable format. There was no evidence of IPC or clinical sign-off of derogations or the FBC design, nor of an escalation process through the NHS A&A Board governance.		

Workbook Ref No.	Areas to probe	Evidence expected
1.8	Integration with Authority Policies and Operation How does the Board demonstrate implementation of evidence based infection prevention and control measures?	The Health Board can demonstrate the current version of the National Infection Prevention and Control Manual has been adopted by the organisation and all staff are aware of how and where to access this. (Ask staff) IPC are fully embedded in the project team and the FBC programme-taking cognisance of any actual or perceived risks identified provided.
NHS Scotland Assure Observations: There is some evidence that the National Infection Prevention and Control Manual (NIPCM) has influenced the design through the use of HAI-SCRIBE. There is no documented evidence as to which parties were involved and if this included IPC representation. There was no evidence presented that IPC were fully embedded in the FBC project team.		

Workbook Ref No.	Areas to probe	Evidence expected
1.9	The Health Boards Infection Prevention and Control Strategy	Assessment of the Health Boards approach to all IPC related matters in relation to the development of the design, HAISCRIBE etc.
NHS Scotland Assure Observations: Parts 2 & 3 of HAISCRIBE (SHFN 30) have been completed but the names and roles of the individuals have not been made clear to demonstrate the involvement of all of the necessary stakeholders.		

Workbook Ref No.	Areas to probe	Evidence expected
1.10	The Health Boards Monitoring and Records	Evidence that the Health Board integrating this project with wider IPC requirements within the context of the FBC. For example, evidence that the proposals for equipping incorporate IPC requirements?
NHS Scotland Assure Observations: There is no evidence that the proposals for equipping take cognisance of wider IPC requirements. NHS A&A have noted they are looking to implement a validation process prior to procuring equipment (in-contract and Board supplied) during the construction stage to ensure IPC and patient safety requirements were not compromised. The formal process has not yet been developed or defined.		

Workbook Ref No.	Areas to probe	Evidence expected
1.11	Planned approach for managing the design process to ensure successful compliance with agreed and approved standards	The project governance arrangements and resource plan in place to ensure that the necessary decision-making authority and technical expertise is available to take responsibility for and deliver the project as planned and agreed. Details of how gaps in expertise are being filled. Details of how compliance with the appropriate guidance, design brief and other standards are being agreed, signed off, monitored, reported against and if necessary escalated / adjudicated throughout the design, construction and commissioning stages. Details of how all stakeholders' interests are being agreed, signed off, monitored, reported against and if necessary escalated / adjudicated throughout the design, construction and commissioning stages.

NHS Scotland Assure Observations:

There is no evidence presented of a project resource plan, a skills gap analysis, plans for design and construction governance or details of how stakeholder's interests are being managed.

Workbook Ref No.	Areas to probe	Evidence expected
1.12	The Health Boards approach on the procurement journey with evidence of the plans on how the Board will provide assurance, particularly emphasis on the critical systems identified earlier.	Evidence on how this requirement is being managed and how it fits with the project governance arrangements Plans to identify any gaps in the procurement approach that may require to be addressed. Evidence on how Infection Prevention and Control are involved with the conceptual procurement approach to the design stage and future plans for project. Evidence that the Health Boards selected procurement route has gone through the Board's Governance channels.

NHS Scotland Assure Observations:

NHS A&A have appointed a PSCP led design team via HFS Framework Scotland 2. There are 5 no. PSCP's on the framework and a mini-competition was undertaken to appoint a PSCP team.

NHS A&A as part of the KSAR response, provided a copy of the interview questions that were used to probe the potential PSCP as to their specific experience of mental health projects, including them providing examples of similar projects over the past 5 years.

This is a recognised procurement route, however it is not clear from the evidence that has been provided as to what IPC expertise NHS A&A employed to support the procurement journey.

Workbook Ref No.	Areas to probe	Evidence expected
1.13	The Health Boards approach on those areas of design that the procurement route has provided identification as possibly being Contractors Designed Portions (CDP's).	Evidence that the procurement of the lead designer will encompass these areas in their oversight and sign off of the complete design. Evidence that a clear demarcation of design responsibility is being developed.

NHS Scotland Assure Observations:

NHS A&A provided a list of the Contractor Design Portions (CDPs) to be applied but no evidence that the lead designer has taken consideration of the planning requirements for CDPs. No evidence was provided that the lead designer would provide oversight/assurance on the CDP.

There is an absence of clear statements regarding demarcation of responsibilities related to these.

Workbook Ref No.	Areas to probe	Evidence expected
1.14	Evaluation of the Health Boards commissioning plan.	Evidence that the Health Board has recorded plans that are comprehensive and adequate to address the needs of the project and that they are fully resourced.
NHS Scotland Assure Observations: The Board's commissioning plan contains no IPC or Mechanical & Electrical (M&E) procedures. For the clinical and other processes, there are lists of headings but many have no time allocation. There is no dialogue to accompany the processes to describe how the commissioning processes will be achieved.		

Workbook Ref No.	Areas to probe	Evidence expected
1.15	Evaluation of the Health Boards duty holder matrix.	Evidence that the Health Board have a fully recorded matrix of the required roles and responsibilities and have a clear governance structure that is fully resourced together with plans in place for the implementation. Evidence that Health Boards have appropriate number of competent, qualified staff to carry out specific duties throughout the life cycle of the project e.g., IPC, Engineers, Estates staff etc. The number of competent, qualified staff will depend on the type and size of the Build Project.
NHS Scotland Assure Observations: There is no detailed roles & responsibilities matrix (RRM) available for the project. There is a document entitled "baseline skills matrix" however it majors on the experience of the Project Director and Project Manager but does not cover other stakeholders or have gap analysis nor evidence of IPC/clinical input to the design.		

3.1.2 Project Governance and General Arrangements: Further Observations

In addition to the points raised via the KSAR workbook above, we also include the following observations as a result of the review, all of which relate to the evidence presented during the audit.

3.1.2.1	There is no documented evidence as to how components are to be signed off as meeting the Board's ligature reduction criteria.
3.1.2.2	There is an absence of IPC or design risk assessments across all elements.
3.1.2.3	Based on the evidence that was provided, none of the 1:50 room layouts have yet been signed off. We would have expected this to have been completed at FBC stage.

3.2 Water and Internal Plumbing / Drainage Systems

3.2.1 Water and Internal Plumbing / Drainage Systems: KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
2.1	Has the Health Board completed competency checks on the water and drainage consultant designers?	Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards. Where anyone does not have a record of extensive health care experience what recorded plans are to be put in place by the Consultant Designers? Recorded evidence that input from the Health Authorising Engineer for Water (AE(W)) has been requested. Evidence that all contractors and sub-contractor competency checks have been completed and signed off.

NHS Scotland Assure Observations:

NHS A&A Authorising Engineer (Water) (AE W) has been approached and their reports on the design intent issued. It is not clear that the comments from the AE W have been managed/incorporated where relevant into the FBC design.

NHS A&A have appointed a Principal Supply Chain Partner (PSCP) led design team via HFS Framework Scotland 2.

NHS A&A as part of the KSAR response, provided a copy of the interview questions that were used to probe the potential PSCP as to their specific experience of mental health projects, including the PSCP providing examples of similar projects over the past 5 years.

No evidence was presented regarding the technical competency of the PSCP or the specialist designers.

Workbook Ref No.	Areas to probe	Evidence expected
2.2	How does the Health Board ensure that water services are designed in a fashion, which will retain space for minor additions and modifications to services in the future?	Evidence that the engineers are presented their co-ordination drawings (BIM model), with space for future flexibility identified, to the Board. Evidence that the Design Consultant has considered and agreed with the Board, space for future flexibility in the service installations. Evidence that the designers have presented each of the main service runs plus plant rooms to the Board's FM team, to highlight space for future flexibility. Evidence that the Board has agreed a strategy (percentage) for spare capacity and a documented allowance to be incorporated into the design. Are plant/tank rooms, IPS sections, horizontal distribution runs and risers appropriately sized for the equipment being installed and facilitate safe adequate maintenance.

NHS Scotland Assure Observations:

There is a lack of evidence as to how the Board ensure that water services are designed in a fashion which will retain space for minor additions and modifications to services in the future. No coordination drawings were received.

The plant room is shown on an incorrect floor plan and shows walls running through the middle of mechanical plant.

No evidence has been provided to show the service runs in section or to identify coordination between services and with structural elements including the timber roof trusses.

Spatial allowance and spare capacity for future expansion is not clear from the evidence that has been provided.

From the evidence that has been provided, maintenance space in the plant room cannot be assessed due to the room layout being incorrect. It is clear, however, that the maintenance of the storage tank base is not compliant with SHTM 04-01 Part A clauses 7.23 & 7.30

Workbook Ref No.	Areas to probe	Evidence expected
2.3	How does the Health Board assure itself that all variations / derogations, which may be required to water systems, are investigated and agreed by all parties before they are incorporated in the design?	Evidence that the each variation / derogation has a detailed technical analysis, has been referred to the Board, and agreed with their water management group clinical, engineering, Estates, infection prevention, control, and FM teams.

NHS Scotland Assure Observations:

The derogations schedule presented only partially addresses variations from guidance or BCR. In most cases a full explanation as to why the derogation is required has not been recorded. None of the derogations indicated have been signed off as agreed by stakeholders. There is no evidence of the stakeholders involved in discussions around the proposed derogations (for example no evidence of input/review from the Water Safety Group, estates team, clinicians or infection control).

Workbook Ref No.	Areas to probe	Evidence expected
2.4	Water Management Strategy	Assessment of Board proposed water management strategy and how this relates to the specification, guidance and project requirements. What involvement has there been from the water management group?

NHS Scotland Assure Observations:

Whilst the Board Contract Requirements (BCRs) (Rev 12) sets out the domestic water requirements, there is no evidence of the Board's water management strategy as (noted in BS 8680 Clause 4.2.1 & Clause 4.2.2) and how this relates to the specification, guidance and project requirements.

Whilst members of the NHS A&A Water Management Group have been engaged at various stages of the project, there is no evidence that they have been involved in the decision making process or that all members of the group have been consulted.

Workbook Ref No.	Areas to probe	Evidence expected
2.5	Water governance arrangements	Has the Board commenced its planning and recorded how it will ensure appropriate numbers of trained staff (AP and CP) and AE(W) will be appointed, is there an established project water management group that ensures the water management strategy is adhered to for the Board and is it clear how this project will interface with this existing group?

NHS Scotland Assure Observations:

There was no evidence presented that the Board has commenced planning for appropriate numbers of trained staff AP and CP. There is no evidence of an established project water management group or how it interfaces with the existing group as per BS 8680 Clause 4.7. NHS A&A have appointed their AE W.

Workbook Ref No.	Areas to probe	Evidence expected
2.6	Evidence that the Health Board is developing commissioning proposals.	Evaluation of the suitability of the proposed plans in the context of the FBC, are these sufficient to meet the requirements of the project, guidance and the design of the system. Evidence that the design has considered the commissioning of the water system including: • Safe storage of materials • Agreed type of chemical (to avoid warranty and corrosion issues) • Adequate time scale • Competency checks on all contractors • Water sampling scope Water sampling test results and approval process.

NHS Scotland Assure Observations:

The commissioning plan does not refer to any of the KSAR evidence expected noted above.

It is directed towards the Board's processes but uses ambiguous references to tasks (with no detailed explanation) and in many cases does not identify a time frame nor inter-relationship with other processes.

The KSAR also identified that there is currently no strategy in place for water and drainage isolations or break-in works to accommodate the new supply from the existing domestic and fire water mains nor for the connection of the drain to the site infrastructure. The project BCRs note the importance of maintaining operation of other areas of the site during the works at all times. In the absence of a detailed strategy, it is currently unclear as to how this will be achieved.

Workbook Ref No.	Areas to probe	Evidence expected
2.7	Evaluation of the Health Boards planned preventative maintenance (PPM) proposals.	Has the Health Board commenced its planning and recorded the PPM requirements and approach to ensure appropriate levels of maintenance, comprehensive statutory compliance and robust management processes, including: • Adequate numbers of staff • Water management PPM including all outlets, TMT & TMV, plumbing and Drainage systems, etc.?
NHS Scotland Assure Observations: There was no evidence presented in relation to the Board's PPM strategy.		

3.2.2 Water and Internal Plumbing / Drainage Systems: Further Observations

In addition to the points raised via the KSAR workbook above, we also include the following observations as a result of the review, all of which relate to the evidence presented during the audit.

3.2.2.1	The derogations schedule requires review and updated (in detail). Departures from SHTM 04-01 were identified during the KSAR that have not been recorded.
3.2.2.2	There is ambiguity around the strategy for the emergency fill point details.
3.2.2.3	The PSCP specification does not refer to the removal and testing of pipework joints as stated in SHTM 04-01. The PSCP specification also does not refer to the need for the installer to have been trained for the specified pipework manufacturer and on a healthcare Water Hygiene Awareness course.
3.2.2.4	There is no evidence of a commissioning brief as noted in SHTM 04-01 and BS 8680.
3.2.2.5	There is conflicting information regarding the filtration unit,. There is also no evidence the filtration unit has been discussed with the Water Safety Group regarding operation and maintenance. The domestic cold water strategy has conflicting information. Where the PSCP schematic indicates a looped return system with associated chiller, the specification notes end of line flush valves. During the KSAR workshop, the PSCP confirmed that the specification requires updating for this section. There is no evidence that alternative control measures for the cold water system temperature had been considered or discussed with NHS A&A. The use of end of line flush valves contravenes the Scottish Water Byelaws. There is also conflicting specifications for domestic water pipework material, both for above ground and below ground installations. The typical details sheet identifies inline thermal disinfection units. (ILTDUs). During the water workshop 14/09/2021 the PSCP acknowledged these were left on the drawings as a carryover from another project. The provision of the ILTDUs are to be reviewed with the Water Safety Group. The domestic water schematic is incomplete. The drainage drawings for the attic and roof levels were missing from the package of information presented by NHS A&A.

3.2.2.6	Details of the sanitary ware package are unclear and there is no evidence that NHS A&A have reviewed the proposals or that it is compliant with HTM 64.
3.2.2.7	There is no evidence of input from the NHS A&A's water safety group

3.3 Ventilation

3.3.1 Ventilation: KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
3.1	Has the Health Board completed competency checks on the ventilation consultant designers?	Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards. Where anyone does not have a record of extensive health care experience what recorded plans are to be put in place by the Consultant Designers? Recorded evidence that input from the Health Boards Authorising Engineer for Ventilation (AE(V)) has been requested. Evidence that all contractors and sub-contractor competency checks have been completed and signed off.

NHS Scotland Assure Observations:

The AE V has been approached and their report issued. It is not clear that the comments from the AE V have been managed/incorporated where relevant.

NHS A&A have appointed a PSCP led design team via HFS Framework Scotland 2.

NHS A&A as part of the KSAR response, provided a copy of the interview questions that were used to probe the potential PSCP as to their specific experience of mental health projects, including them providing examples of similar projects over the past 5 years.

No evidence was presented regarding the technical competency of the PSCP or the specialist designers.

Workbook Ref No.	Areas to probe	Evidence expected
3.2	How does the Health Board ensure that ventilation services are designed in a fashion, which will retain space for minor additions and modifications to services in the future, and there is an appropriate plant access strategy?	Evidence that the design engineers have presented their co-ordination drawings (BIM model), with space for future flexibility identified, to the Board. Evidence that the design consultant has considered and agreed with the Board, space for future flexibility in the service installations. Evidence that the design engineers have presented each of the main service runs plus plant rooms to the Board's Estates team and / or FM team, to highlight space for future flexibility. Evidence that the ventilation solution has been agreed with clinical and IPC colleagues. Evidence that the Board has agreed a strategy (percentage) for spare capacity and a documented allowance to be incorporated into the design. Are plant rooms, horizontal distribution runs and risers appropriately sized for the equipment being installed and facilitate safe adequate maintenance? Evidence that a plant access strategy for the entire ventilation system has been provided to ensure safe, adequate access, including access for cleaning.

NHS Scotland Assure Observations:

There was a lack of evidence presented as to how the Board ensure that ventilation services are designed in a fashion which will retain space for minor additions and modifications to services in the future.

No coordination drawings were received as part of the review package.

No coordinated plant room layouts to evidence access space were provided. The PSCP specification notes that cleaning of ductwork shall be undertaken in accordance with relevant guidance, however there is no detail as to what the relevant guidance is or what processes will be implemented in this respect.

No evidence has been provided to show the building service runs in cross section or to identify coordination between services and with the timber roof trusses.

The dimensions of the air handling unit and grilles have been noted but not for the other elements of plant and no evidence has been provided to show space planning for risers has been carried out.

Workbook Ref No.	Areas to probe	Evidence expected
3.3	How does the Health Board assure itself that all variations / derogations, which may be required to the ventilation systems, are investigated and agreed by all parties before they are incorporated in the design?	Evidence that the each variation / derogation has a detailed technical analysis, has been referred to the Board, and agreed with their ventilation safety group, clinical, engineering, Estates, infection control and FM teams.
NHS Scotland Assure Observations: The derogations schedule presented only partially addresses variations from guidance or BCR. In most cases a full explanation as to why the derogation is required has not been recorded. None of the derogations indicated have been signed off as agreed by stakeholders. There is no evidence of the stakeholders involved in discussions around the proposed derogations.		

Workbook Ref No.	Areas to probe	Evidence expected
3.4	Does the Health Board have a strategy for ventilation (for rooms where this is permitted within the SHTM/SHPN guidance)?	Evidence of agreed environmental matrix. Evidence that the Dynamic thermal modelling confirms what the design must include (e.g. structure, solar shading/protection, orientation, equipment optimisation, etc.) to ensure that room temperatures comply with SHTM guidance, in naturally ventilated rooms. Floor plans with associated plant locations highlighted plus simple schematic of strategy. This must also identify the air intake and exhaust strategy / locations.
NHS Scotland Assure Observations: An environmental matrix exists but no evidence was presented of how this was prepared, agreed and signed off. A Dynamic thermal modelling study has been completed. It is noted however that the full range of CIBSE weather data (current and future) has not been analysed and therefore does not consider mitigation to the rooms which are shown to overheat. The BCRs require independent verification of the computer modelling but no evidence has been provided that this has taken place. No evidence exists to establish that occupancy patterns and equipment heat gains that have been included in the simulations are representative of the actual operation. There is no schematic nor details of the duct arrangements at air intakes/exhausts.		

Workbook Ref No.	Areas to probe	Evidence expected
3.5	Is there evidence of stakeholder input to ventilation strategies?	Addition to or supplement to the Environmental Matrix which confirms the following, on a room by room basis: a) The type of ventilation (to SHTM 03-01) b) Patient group and / or function related to the space. c) Name of the Consultant, Clinical Lead or Department Lead who has agreed to the room requirements. d) Name of the Infection Prevention and Control Doctor or equivalent who has agreed to the room requirements. e) Name of the Infection Prevention and Control Nurse who has agreed to the room requirements. f) Name of the Estates / FM team representative who has agreed to the room requirements. g) Name of the NHS Project Manager who has agreed to the room requirements. Name of the Decontamination Manager who has agreed to the room requirements (where this is part of the project).

NHS Scotland Assure Observations:

There was no evidence presented of stakeholder involvement in the development of the ventilation strategies.

The environmental matrix does identify the ventilation type and air changes for each space. However, there are a number of spaces that are non-compliant with SHTM 03-01 and the Scottish Technical Handbook Non-Domestic (e.g. Treatment Rooms, the Ward Kitchen and the Swing Rooms). There is no evidence to note these have been recorded as derogations or agreed variations to the technical standards.

Workbook Ref No.	Areas to probe	Evidence expected
3.6	Is there evidence of the Health Board developing Ventilation Commissioning Proposals?	Evaluation of the suitability of the proposed plans in the context of the FBC, are these sufficient do the meet the requirements of the project, guidance and the design of the system? What plans have been made for independent validation of the ventilation systems? What plans have been made for independent verification of the ventilation system? What plant and ductwork cleaning has been specified? What safe adequate access has been allowed for access to dampers?

NHS Scotland Assure Observations:

The commissioning plan does not refer to any of the KSAR topics. It is directed towards the Board's processes but uses ambiguous references to tasks (with no detailed explanation) and in many cases does not identify a time frame nor inter-relationship with other processes. There are no theatre or other critical ventilation systems that require specialist validation in accordance with SHTM 03-01.

There is no evidence that NHS A&A have considered if independent verification of their general ventilation systems is required to ensure adherence to the design requirements.

There is no reference within the Mechanical Services Specification that the preparation and protection of ductwork during manufacture and installation will be assessed with a view to minimising contamination of duct systems from fabrication through delivery and construction.

There is no evidence to indicate that a ductwork cleaning strategy has been developed.

The ceiling access hatch strategy is not yet fully developed, therefore it cannot be established at this stage whether adequate safe access has been provided to dampers.

The KSAR has also identified that there is a lack of supporting evidence to note that fire/smoke dampers will be installed in accordance with the manufacturers certified details.

Workbook Ref No.	Areas to probe	Evidence expected
3.7	Has the Health Board started developing its ventilation governance arrangements?	Has the Health Board commenced its planning and recorded how it will ensure appropriate numbers of trained staff (AP and CP) staff and appointment of AE(V) for the project and is it clear how this project will interface with the Health Boards existing arrangements for management of the ventilation installations?

NHS Scotland Assure Observations:

There is no evidence that the Board has started to develop their ventilation governance.

There is no evidence that the Board has commenced planning for appropriate numbers of trained staff AP and CP.

Workbook Ref No.	Areas to probe	Evidence expected
3.8	Evaluation of the Health Boards planned preventative maintenance (PPM) proposals.	Has the Health Board commenced its planning and recorded the PPM requirements and approach to ensure appropriate levels of maintenance, comprehensive statutory compliance and robust management processes?

NHS Scotland Assure Observations:

There is no evidence of the Board's PPM strategy with respect to the NSAIS project.

3.3.2 Ventilation: Further Observations

In addition to the points raised via the KSAR workbook above, we also include the following observations as a result of the review, all of which relate to the evidence presented during the audit.

3.3.2.1	During the review the PSCP design team indicated that a number of assumptions had been made within the design calculations including the thermal model. They also intimated during the review that a number of these assumptions had still to be validated by NHS A&A.
3.3.2.2	The overheating analysis indicates a number of areas that do not comply with the specified CIBSE TM52 criteria. The report identifies that a number of rooms exceed the criteria and that further analysis would be carried out to identify mitigating measures. It is unclear whether these have been reviewed and/or accepted by NHS A&A, nor whether any mitigation has been proposed to maintain thermal comfort within the space.
3.3.2.3	There are currently no cooling layout drawings although specific rooms have been identified in the small power drawing for the provision of cooling (e.g. Living Area, De-escalation Room, Seclusion room IT Room, and Gym Room). There is also no evidence of a study to assess the need for refrigerant gas monitoring as BS EN 378.
3.3.2.4	The relationship of fire dampers to parts of the structure are non-standard, nor is it evident that the dampers will be installed in accordance with the manufacturers certified details.
3.3.2.5	A kitchen facility is noted as part of the new facility. It is unclear from the evidence that has been provided as to what function this kitchen will serve, there is also conflicting information whether fire rated ductwork as noted in the specification shall be used or fire dampers as per the drawings. From the evidence that has been provided it is also unclear as to the function of the

	kitchen and what level of fire protection measures are required with respect to the ventilation system. No supporting calculations were provided in respect to DW172 and it is also unclear as to the required make-up air strategy to the Kitchen.
3.3.2.6	Whilst sound attenuators and cross-talk attenuators are noted as part of the ventilation design information, there is a lack of supporting detail around the specification of these to demonstrate compliance with the project acoustic performance requirements.
3.3.2.7	The primary heat source is to be derived from the existing Central Decontamination Unit, however, there is a lack of supporting evidence as to how this will be developed, including validation of whether this strategy is feasible.
3.3.2.8	From the information that has been provided, the air handling unit (as scheduled) would appear not to be able to deliver the required air volumes required for the facility.
3.3.2.9	The report from NHS A&A AE V indicates some deficiencies with the ventilation solution as designed. There is no evidence as to how these comments are to be resolved and incorporated.

3.4 Electrical: KSAR Observations

3.4.1 Electrical: KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
4.1	Has the Health Board completed competency checks on the electrical consultant designers?	Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards. Where anyone does not have a record of extensive health care experience what recorded plans are to be put in place by the Consultant Designers? Recorded evidence that input from the Health Boards Authorising Engineer for Electrical (AE(E)) has been requested. Evidence that all contractors and sub-contractor competency checks have been completed and signed off.
NHS Scotland Assure Observations: No evidence was provided that the AE E was approached to review the design proposal. NHS A&A have appointed a PSCP led design team via HFS Framework Scotland 2. There are 5 no. PSCP's on the framework and a mini-competition was undertaken to appoint a PSCP team. No evidence was presented regarding the technical competency of the PSCP or the specialist designers. No electrical sub-contractor has yet been appointed.		

Workbook Ref No.	Areas to probe	Evidence expected
4.2	How does the Health Board ensure that electrical services are being designed in a fashion which will provide ease of access for future maintenance and which will retain space for minor additions and modifications to services in the future?	Evidence that the designers have presented their co-ordination drawings (BIM model) to the Board. Evidence that the designers have presented each of the main service runs plus plant rooms to the Health Board's FM team. Evidence that the Board has agreed a strategy (percentage) for spare capacity and a documented allowance has been incorporated into the design. Are sub stations, switch rooms, distribution board cupboards, horizontal distribution runs and risers appropriately sized for the equipment being installed and facilitate safe, adequate maintenance.

NHS Scotland Assure Observations:

There is a lack of evidence as to how the Board ensure that electrical services are designed in a fashion which will retain space for minor additions and modifications to services in the future. No coordination drawings were received.

No coordinated plant room layouts were provided to evidence maintenance access space.

No evidence has been provided to show the service runs in section or to identify coordination between services and with the timber roof trusses.

Drawings were provided, however a number of inconsistencies were identified during the KSAR between the electrical drawings and architectural/other services packages.

As part of the technical workshops, the NHS A&A Electrical Estates representative noted they had been consulted on strategies, however there was no auditable evidence provided to demonstrate their subsequent review/sign off of final design solutions.

The NHS A&A project BCR's indicate the need for the design to consider future expansion. Whilst elements of this were demonstrated within the electrical documents that were provided, the KSAR identified a number of inconsistencies between the BCRs and developed design solutions.

Workbook Ref No.	Areas to probe	Evidence expected
4.3	How does the Health Board assure itself that all variations / derogations, which may be required to electrical systems, are investigated and agreed by all parties before they are instigated?	Evidence that the each variation / derogation has a detailed technical analysis, has been referred to the Board, and agreed with their electrical safety group, clinical, Estates, infection prevention and control and FM teams.

NHS Scotland Assure Observations:

There are no electrical derogations noted by the PSCP, however a number of potential non-compliance with guidance issues have been identified through the KSAR. NHS Scotland Assure also note that the NHS A&A Authorising Engineer (LV & HV) has not been part of their project governance/review process (other discipline AE's were consulted).

At the current stage of the project, NHS Scotland Assure note this is a significant project risk and the derogation schedule should be created as a priority.

Workbook Ref No.	Areas to probe	Evidence expected
4.4	Has the Health Board assured itself of availability of adequate supply from the local utility infrastructure?	Confirmation from the Regional Electricity Company as to how the supply will be provided from their network and if single or dual supplies are being made available. What is the Health Board's resilience strategy for the electrical infrastructure (including dual supplies, renewables, generators, UPS, etc.)?

NHS Scotland Assure Observations:

The new electrical supply to the NSAIS is derived from an existing NHS A&A sub-station on site. Whilst a load assessment has been undertaken, it is unclear from the evidence that has been provided as to whether the anticipated increase in load has been reviewed against the existing Electricity Supply Agreement or demand capacity.

With respect to the resilience strategy, the NSAIS also relies on the existing generator for standby power provision. It is unclear from the documentation that has been provided whether the capacity, load acceptance factors and start-up times of the existing generator have been validated against the projected increase in electrical load.

The electrical calculations provided do not consider the generator, therefore the performance of the system under fault condition (on generator) and the impact on the facilities resilience strategy has not been demonstrated.

There is no evidence of a full resilience review in accordance with SHTM 06-01. A number of single points of failure have been identified as part of the KSAR, including the supply cable from the existing substation to the new NSAIS switch room. no evidence was provided to give assurance that this risk has been reviewed and accepted by NHS A&A.

Workbook Ref No.	Areas to probe	Evidence expected
4.5	Evidence of provisions for emergency supplies during loss of the utility incoming supply.	Floor plans with standby generator locations highlighted plus simple schematic.

NHS Scotland Assure Observations:

The NSAIS facility utilises the existing site standby generator. The system is configured in such a manner that the NSAIS facility has a single supply from an existing switchboard within the existing site substation. The substation is provided with generator backup.

This represents a single point of failure and it is unclear from the evidence that has been provided whether this has been reviewed and accepted by NHS A&A.

Workbook Ref No.	Areas to probe	Evidence expected
4.6	Is there a strategy for locating substations?	Floor plans with substation locations highlighted plus simple schematic of strategy.

NHS Scotland Assure Observations:

No new substations are proposed as part of the works. The existing substation from which the new facility is to be supplied from is shown both on the schematics and site distribution drawings.

Workbook Ref No.	Areas to probe	Evidence expected
4.7	Is there a strategy for locating switch rooms?	Floor plans with switchroom locations highlighted plus simple schematic.

NHS Scotland Assure Observations:

There is one switchroom proposed within the new NSAIS facility. Whilst this is indicated on the drawing, the KSAR identified a number of potential co-ordination issues with the current design proposals including how cable ducts transition into the space and whether the new switchboard is top/bottom entry. It is also unclear from the information that has been provided whether the incoming ducts have been co-ordinated with the civil & structural design.

Workbook Ref No.	Areas to probe	Evidence expected
4.8	Is there a strategy for locating Medical IT distribution equipment?	Floor plans with Medical IT board locations highlighted plus simple schematic. Compliance with BS7671 section 710 Compliance with SHTM 06-01

NHS Scotland Assure Observations:

There are no Medical IT systems proposed for the facility.

The electrical design documents indicate that there are no Group 1 or Group 2 Medical Locations as defined in BS7671 Section 710. There are also no high risk clinical areas identified in accordance with SHTM 06-01.

Whilst the design documents make these assertions, there is no evidence of stakeholder consultation in developing these assumptions. This was also confirmed during the technical workshops.

Workbook Ref No.	Areas to probe	Evidence expected
4.9	Is there a strategy for distribution?	Floor plans with containment distribution routing (horizontal and vertical).

NHS Scotland Assure Observations:

Electrical containment drawings were provided as part of the KSAR response. It is noted that further co-ordination of all services is required to ensure where the design intent is to access containment from the level 1 gantry, this can be done safely without a risk to operatives (e.g. over-reaching). No evidence was presented regarding the co-ordination is also required with respect to where ceiling access hatches are to be located. No strategy was provided for the future re-wiring of NSAIS.

Workbook Ref No.	Areas to probe	Evidence expected
4.10	Is there evidence of the Health Board developing electrical commissioning proposals?	Evaluation of the suitability of the proposed plans in the context of the FBC, are these sufficient do the meet the requirements of the project, guidance and the design of the system? Has sufficient time been allocated for a full commissioning program?

NHS Scotland Assure Observations:

The commissioning plan does not refer to any of the KSAR topics.

It is directed towards the Board's processes but uses ambiguous references to tasks (with no detailed explanation) and in many cases does not identify a time frame nor inter-relationship with other processes.

The KSAR also identified that there is currently no strategy in place for electrical isolations or break-in works to accommodate the new supply from the existing substation. The project BCRs note the importance of maintaining power to other areas of the site during the works at all times. In the absence of a detailed strategy, it is currently unclear as to how this will be achieved.

Workbook Ref No.	Areas to probe	Evidence expected
4.11	Has the Health Board starting on its early thinking for the electrical governance arrangements for the operational phase?	Has the Health Board commenced its planning and recorded how it will ensure appropriate trained staff and appointment of AE for the project and is it clear how this project will interface with the Health Board existing arrangements for management of the electrical installations, inclusive of third party providers?
NHS Scotland Assure Observations: The new facility is part of an existing site. There is no evidence that the Board has started to develop their electrical governance. There is no evidence that the Board has commenced planning for appropriate numbers of trained staff AP and CP. There is no evidence of an established project electrical management group or how it interfaces with the existing group.		

Workbook Ref No.	Areas to probe	Evidence expected
4.12	Evaluation of the Health Boards planned preventative maintenance (PPM) proposals.	Has the Health Board commenced its planning and recorded the PPM requirements and approach to ensure appropriate levels of maintenance, comprehensive statutory compliance and robust management processes, inclusive of third party providers?
NHS Scotland Assure Observations: There is no evidence of the Board's PPM strategy.		

3.4.2 Electrical: Further Observations

In addition to the points raised via the KSAR workbook above, we also include the following observations as a result of the review, all of which relate to the evidence presented during the audit.

3.4.2.1	The NHS A&A BCRs note the importance of maintaining continuity of services to the existing estate as part of the NSAIS works. The proposed electrical infrastructure to support the new NSAIS facility is derived from an existing switchboard that serves other parts of the estate. No electrical isolation strategy has been developed, therefore it is unclear how continuity of electrical supply will be maintained to other areas of the site when the installation of the new sub-main cabling to NSAIS is being undertaken.
3.4.2.2	With respect to the access control and security strategy for the facility, whilst this is noted as a CDP, there are a number of potential gaps in the strategy that are still being developed. NHS A&A noted during the review that they have a number of other documents that were not provided through the KSAR evidence submittal on Microsoft Teams as they wanted to ensure that the integrity of their security strategy was not compromised by sharing information on an uncontrolled platform. This was identified late in the process, with NHS A&A subsequently offering restricted access to the information for a limited

	number of key NHS Scotland Assure personnel. As this was identified late, NHS Scotland Assure did not have time to review the additional information, however key themes were discussed as part of the technical workshop. NHS A&A acknowledged that security cause and effect had still to be finalised. As this is a secure facility, the locking strategy will be of key importance, both from a security perspective but also from a fire safety/evacuation perspective. This may also have an impact on statutory approvals, including Building Warrant.
3.4.2.3	There are inconsistencies between the project BCRs and design information with respect to future expansion of MEP systems (e.g. spare capacity, spare load provision, etc.). It is also unclear whether NHS A&A have taken cognisance of the principles of HBN 00-07 Planning for a Resilient Healthcare Estate when developing the strategy.

3.5 Medical Gases

This section is not included as there are no piped medical gases provided as part of the NSAIS facility.

3.6 Fire: KSAR Observations

3.6.1 Fire: KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
6.1	Has the Health Board completed competency checks on the Fire Engineering consultant designers?	Recorded evidence that the design team are experienced and have a comprehensive knowledge of the relevant design standards applicable to healthcare premises. Recorded evidence that input from the Health Boards Fire Advisors has been requested. Evidence that all contractors and sub-contractor competency checks have been completed and signed off.

NHS Scotland Assure Observations:

NHS A&A have appointed a PSCP led design team via HFS Framework Scotland 2. There are 5 no. PSCP's on the framework and a mini-competition was undertaken to appoint a PSCP team.

NHS A&A as part of the KSAR response, provided a copy of the interview questions that were used to probe the potential PSCP as to their specific experience, including them providing examples of similar projects over the past 5 years, however there were no specific questions relating to fire engineering noted.

No evidence was presented regarding the technical competency of the PSCP or the specialist designers.
There is evidence of limited involvement from the Boards Fire Advisor. We note that during the KSAR it was identified that the original Fire Advisor had left the Board and it was not clear to what extent the proposed strategy had subsequently been reviewed by their successor. Evidence of fire strategy approval/sign off was also lacking.

Due to the nature of the facility, there are a number of complexities surrounding the proposed strategy that require further input from stakeholders – again there was no evidence provided that such an exercise had been undertaken, only anecdotal references during the technical workshops to note that dialogue had taken place in the background.

No specialist sub-contractors have yet been appointed.

Workbook Ref No.	Areas to probe	Evidence expected
6.2	Has a written fire strategy been completed and does it provide evidence, where there is a variance from statutory and mandatory guidance, that an equivalent level of safety has been achieved by alternative means?	Is there documented evidence that fire suppression systems have been considered for life safety and property protection? Is progressive horizontal evacuation available for all patient areas that continuously moves away from the fire area? Does the design considerations of the fire and detection system, for in-patient facilities, provide L1 coverage including voids? Does the design provide for a compliant emergency lighting system? Are free swing arm self-closers fitted to all leafs of doors serving sleeping accommodation? Have escape lifts been considered for the evacuation of patients and others with mobility issues? Are multi sensor fire detectors installed to reduce the occurrence of unwanted fire alarm signals? Are there adequate storage facilities to ensure escape routes are not used for this purpose? Are measures in place to provide safe charging of electrical and personal electronic equipment? In addition to the prescribed list in the Building Standards Technical Handbook, have fire hazard rooms been designated based on fire load? Where there is a mechanical ventilation system - have all compartments, sub-compartments and corridors serving sleeping accommodation been designed to be fitted with fire and smoke dampers?

NHS Scotland Assure Observations:

An L1 fire alarm system is proposed, however the KSAR has identified a number of areas requiring further clarification including detector spacing's, provision of detection within voids & co-ordination with building structure and placement of manual call points in accordance with the progressive horizontal evacuation (PHE) strategy and SHTM 82. The project documents also note that there may be "relaxations/amendments" to BS5839 to facilitate compliance with SHTM 82, however these are not explicitly noted.

Overall adherence to SHTM 82 is not apparent in a number of areas, including sounder levels and management of the PHE strategy.

An emergency lighting system is provided, however there are areas with no emergency lighting provided, with no supporting evidence as to why no emergency lighting is included. It is unclear from the evidence that has been provided whether risk assessments in accordance with BS5266-1: 2016 for high risk task areas or CIBSE LG2:2019 Chapter 9 have been undertaken.

The patient bedrooms, confirmed during the technical workshops as not being immediately evacuated, do not have any emergency lighting and the current drawings provide emergency lighting on the escape routes only.

Given the specialist nature of the facility, consideration must be given to the impact a loss of general lighting may have on the patient cohort and the need for any enhanced emergency illumination levels. The risk assessment should also take cognisance of the requirements of CIBSE LG2:2019 section 9.2 with respect to PHE.

As NHS A&A should ensure a board management procedure is implemented to manage secure doors.

There are no escape lifts as the building (with the exception of the access gantry level above patient bedrooms and the plantroom) is single storey.

Multi-sensor detector heads are specified for use within the facility.

No concerns with respect to storage provision were identified during the KSAR. Due to the nature of the facility, storage of materials in circulation spaces is highly unlikely.

No evidence of a device charging strategy was provided. NHS A&A should develop a standard operating procedure in this respect during subsequent stages of the project, with input from their local Fire Advisor.

Fire hazard rooms are defined, with no significant observations identified during the KSAR.

Generally natural ventilation is provided to the sleeping accommodation. No significant observations were identified during the KSAR.

Workbook Ref No.	Areas to probe	Evidence expected
6.3	How does the Health Board assure itself that all variations / derogations, which may be required to fire systems, are investigated and agreed by all parties before they are instigated?	Evidence that the each variation / derogation and any fire engineering proposals are being referred to the Board and agreed with their fire safety advisors, NDAP group, clinical, engineering, Infection Prevention and Control, FM teams and regulatory authorities.

NHS Scotland Assure Observations:

Generally, a code compliant solution is proposed, however further information is required with respect to the PHE strategy, locking strategy & fire alarm cause/effect.

Within the proposed strategy documents there is no evidence to show final assembly points.

As part of the technical workshops, NHS A&A noted that the internal fire rated partitions would be constructed from a non-standard detail, similar to that employed at another facility within their estate. They intimated that a review of this with relevant stakeholders was ongoing and that further type tests of the proposed construction detail were due to be undertaken. There is no reference to this within the Fire Engineering review, nor evidence of a documented review of this strategy.

Workbook Ref No.	Areas to probe	Evidence expected
6.4	How does the Health Board assure itself that all fire dampers and fire/smoke dampers are designed to allow for inspection, resetting and maintenance?	Safe and adequate access has been allocated on both sides of all fire dampers for maintenance.

NHS Scotland Assure Observations:

The Mechanical Specification requests that an access is provided in the ductwork to one side of the fire damper, not both. It is therefore unclear if this affords suitable access to ensure that the damper can be inspected and reset manually, if necessary.

There was no documented evidence of a strategy for limiting the location and number of access hatches through ceilings in patient occupied areas (it was noted verbally at the Ventilation workshop that a strategy would be applied). It is not clear therefore how the strategy might impact on the siting of fire damper access or access to other components.

Fire dampers are shown in locations which do not align with the line of the wall (i.e. the walls are not all at 90° angles with respect to the ductwork) and there are also fire dampers shown resting on top of duct plenums on the ceiling. There is no evidence that the proposed installation method will maintain the manufacturers certified fire resistance of the damper.

Workbook Ref No.	Areas to probe	Evidence expected
6.5	How does the Health Board assure itself that any smoke control and/or clearance systems are fit for purpose?	Evidence that the smoke system is being designed by an accredited Fire Engineer. Evidence that Building Control are being consulted. Confirmation that the Health Boards fire advisors and NDAP team are satisfied with the design proposal.
NHS Scotland Assure Observations: N/A - no smoke control systems are proposed nor identified as being a requirement within the fire strategy documents.		

Workbook Ref No.	Areas to probe	Evidence expected
6.6	Has the Health Board started the development of the fire system outline commissioning proposals?	Is there an established fire management group that will ensure the fire strategy is adhered to?
NHS Scotland Assure Observations: The facility is part of an existing site and anecdotal evidence of input from the local advisor was provided as noted in 6.1. There was no evidence to note that a dedicated fire management group had been established.		

Workbook Ref No.	Areas to probe	Evidence expected
6.7	Has the Health Board started its early thinking for the Fire Safety arrangements for the operational phase?	Has the Health Board commenced its planning and recorded how it will ensure appropriate trained staff and appointment of Fire Officers for the project in the operational phase and is it clear how this project will interface with the Health Boards existing arrangements for management of the Fire Safety?
NHS Scotland Assure Observations: Whilst anecdotal evidence of Fire Officer engagement was evident through the KSAR technical workshops, no auditable evidence was provided to support this. It was apparent that the clinical team were aware of risks due to patient cohort, but they noted that the management plan is still to be developed as part of the technical workshops. There was no specific reference to training or commissioning with respect to the fire strategy in the documents that have been provided.		

3.6.2 Fire: Further Observations

In addition to the points raised via the KSAR workbook above, we also include the following observations as a result of the review, all of which relate to the evidence presented during the audit.

3.6.2.1	The current fire strategy documentation does not provide suitable evidence to demonstrate that the evacuation strategy will meet with the recommendation of Firecode and the non-domestic technical handbook, in particular section 2.9 (with at least one means of escape from fire that offers a safe passage to a place of safety outside the building). There is a lack of supporting evidence to demonstrate how progressive horizontal evacuation (PHE) can be achieved. There is a lack of detail within the project documentation with respect to final exit routes and how they work in operation to the secured perimeter.
3.6.2.3	There is no evidence to indicate that the Scottish Fire and Rescue Service have been consulted over the suitability of the fire appliance access route, in particular whether the weight of a fire appliance exceeds the weight restriction applied to the route.
3.6.2.4	NHS A&A will require confirmation that Building Control are satisfied with the type of material used in the internal partition linings, and a certificate/data sheet to evidence the actual performance of the type of material used i.e. European Classification B.
3.6.2.5	The evidence that has been provided as part of the KSAR does not demonstrate that the fire hydrants meet the requirements of BS9990 and BS750 current editions.
3.6.2.6	The project drawings & specification note that "*Void detection shall be provided as required*". Whilst this is a contractor design element, the level of detail on the drawings makes it unclear as to whether a sufficient number of detectors within the voids are provided to ensure full compliance with BS5839-1:2017.
3.6.2.7	Whilst the electrical specification (NSAIS-HAK-XX-XX-SP-E-60-0001) provides an overview of system operation, there is no overall cause and effect matrix to indicate how mechanical plant, access control and other associated systems are to operate in the event of a fire alarm condition.
3.6.2.8	The electrical specification (NSAIS-HAK-XX-XX-SP-E-60-0001) notes an alarm investigation period as follows: "*The fire alarm panel shall have an adjustable time delay of between 0 to 360 seconds, such that on initiation of an alarm by a single automatic device, the fire alarm panel shall register the alarm, but the system sounders and output devices shall not be activated until the pre-determined time has elapsed, or a second automatic device within the same zone activates, or any manual break glass unit or beam detector is activated*". It is unclear from the documentation that has been provided whether this has been agreed with the relevant approving bodies or stakeholders including Building Control, Scottish Fire & Rescue Service and clinical teams.
3.6.2.9	Whilst the specification identifies the need for fire rated cabling, it does not specifically note the requirement for the fixings/supports to afford the same level of fire protection as the cabling. BS 5839-1:2017 26.2(f) notes: *"Methods of cable support should be non-combustible and such that circuit integrity is not reduced below that afforded by the cable used, and should withstand a similar temperature and duration to that of the cable, while maintaining adequate support.*

	NOTE 10 In effect, this recommendation precludes the use of plastic cable clips, cable ties or trunking, where these products are the means of cable support. *NOTE 11 Experience has shown that collapse of cables, supported only by plastic cable trunking, can create a serious hazard for firefighters, who could become entangled in the cables."*
3.6.2.10	As part of the technical workshops held during the KSAR, the PSCP designer confirmed that to meet the requirements of SHTM 82 Paragraph 3.24 *"the combined detector/sounder devices have been specified to include the functionality to adjust the sound output levels. The devices within the corridors shall be programmed accordingly to meet the sound output levels stated above within the bedroom areas."* Whilst the electrical specification section 3.15.15.2 notes "*Electronic sounders shall have an output of 103dBA at 1m, adjustable to 83dBA*.", the actual target levels in accordance with SHTM 82 have not been detailed within the project documentation. It is also unclear from the response whether the sound levels in a number of cellular spaces, including toilets and offices, have been considered in accordance with BS5839-1:2017 Chapter 16.
3.6.2.11	Section 3.15.1 of the specification notes: *"The Fire Alarm System shall comply with BS.5839:2017 with L1 Protection with relaxations/amendments as identified within the SHTM Firecode."* There are no stated relaxations/amendments to BS5839:2017 within the project documentation. Any departure from BS5839 must be clearly stated and agreed with stakeholders and approving bodies such as Building Control. Section 3.15.1 further states: *"In addition to the subsequent specification for fire alarm installation the contractor may offer/propose alternative and compliant fire detection and alarm system subject to fire officer, insurer and FM provider approval."* The context of the statement is unclear as to whether this permits the contractor to change the category of system. There is also no mention of further stakeholder approval.
3.6.2.12	There are a number of areas where it is not clear if detector spacing/placement is compliant with BS5839-1:2017. For example, a number of detectors in the upper level plantroom are very close to the 7.5m detection radius for a conventional smoke detector. It is also unclear whether devices have been fully co-ordinated with respect to the building structure, including structural members (e.g. water tank plantroom) and proximity of detectors to walls (e.g. Ladder Room 05.07).
3.6.2.13	The fire engineering report (FS1836/R1 Issue 2), section 2.5.1 notes *"The evacuation strategy for Foxgrove will be progressive horizontal evacuation, i.e. occupants from a fire-affected compartment will be evacuated into an adjoining fire compartment rather than the entire building evacuating simultaneously."* It is not clear on the project fire alarm drawings (NSAIS-HAK-XX-00-DR-E-68-0001 Rev A & NSAIS-HAK-XX-01-DR-E-68-0001 Rev A) whether the manual call point locations are fully aligned with this strategy or reflective of the recommendations of SHTM 82 as there are some compartments with no apparent call point provision (e.g. patient bedroom corridor between gridlines 15/L and 16/L – the nearest call point location is further down the corridor in a separate compartment).

	SHTM 82 Paragraph 4.3 notes: *"In order to ensure that the appropriate alarm signal is given in each area, and that an accurate indication of the location of the fire is given at the fire alarm indicating equipment, manual call points should also be sited on both sides of main doorways between detection zones (that is, on each direction of approach). This is particularly important in the case of main doorways between compartments and between sub-compartments."*

3.7 Infection Prevention & Control Built Environment

3.7.1 Infection Prevention & Control Built Environment: KSAR Observations

Workbook Ref No.	Areas to probe	Evidence expected
7.1	How does the Health Board demonstrate that there is an effective infection prevention and control management structure in place? How does the Board demonstrate leadership and commitment to infection prevention and control to ensure a culture of continuous quality improvement throughout the organisation and that there is an effective IPC structure in place; inputting into the design process?	The Health Board provides evidence that there is an IPC Management Structure with the necessary expertise and leadership skills to support the design work The Health Board provides evidence that there is an IPC Management Team with the necessary expertise and leadership skills to support the project. Executive board reports or minutes. Risk registers or equivalent, Minutes from operational and governance groups, (and action points). Structure of infection prevention and control team (IPCT) and qualifications held, previous experience supporting new build projects. Evidence IPC and clinical teams have been involved with any derogation through the design process and are satisfied this will not impact on patient safety. This can be meeting minutes, risk assessments, and risk registers. There is IPC evidence of escalation through the agreed NHS board governance process. Evidence the Executive Board Member assigned to lead on IPCT has been kept informed of IPC risks identified and associated with the project this can be demonstrated by the board. Evidence that fixtures fitting and equipment have not been proposed for the project that would represent an identified IPC risk. Evidence that all contractors and sub-contractor competency checks have been completed and signed off.

NHS Scotland Assure Observations:

There is a lack of documented evidence outlining IPC team structure, leadership and experience. Anecdotal evidence was provided throughout the KSAR workshops, however there was no supporting auditable evidence.

The HAI-SCRIBE documentation provides some evidence of IPCT involvement with the design process but records of the process (e.g. minutes of meetings) have not been provided.

No evidence was provided to demonstrate that the Executive Board Member responsible for IPC has been briefed on potential IPC risks e.g. minutes of Infection Prevention and Control Committee meetings at which the Exec is present and relevant issues (e.g. water safety; food hygiene; hand hygiene; pest control; risks to other patients during construction) are discussed.

Whilst verbal assurance was provided through the KSAR workshops that fixtures and fittings will be procured through national processes, no supporting evidence was provided in this respect. NHS A&A intimated during the KSAR workshops that a formal control process was being developed for the next stage of the project.

No evidence was provided with respect to contractor or sub-contractor competency in relation to IPC.

Workbook Ref No.	Areas to probe	Evidence expected
7.2	How does the Health Board demonstrate implementation of evidence based infection prevention and control measures during the design process?	The Health Board provides evidence • The board can demonstrate the current version of the National Infection Prevention and Control Manual has been adopted by the organisation and all staff are aware of how and where to access this and it is being referred to during the design process. The board can demonstrate IPC advisors have been included within the design phase and development of HAISCRIBE.

NHS Scotland Assure Observations:

NHS A&A noted during the KSAR workshops that operational procedures in accordance with the NIPCM had not yet been developed. NHS A&A also intimated that these would be developed to take cognisance of the patient cohort during the subsequent stages of the project and that full training would be provided. No auditable evidence was provided as part of the KSAR to indicate the development of these procedures.

The HAI-SCRIBE documentation provides some evidence of IPCT involvement with the design process but records of the process (e.g. minutes of meetings) have not been provided.

Workbook Ref No.	Areas to probe	Evidence expected
7.3	How does the Health Board assure itself that the designers have a proper understanding of the infection prevention and control procedures required?	The Health Board evidences that: • All relevant staff within the designers' organisation are provided with clear guidance on roles and responsibilities in relation to infection prevention and control. The contractors' organisation will provide evidence of education in relation to infection prevention in the built environment for all staff involved in the project.
NHS Scotland Assure Observations: NHS A&A provided a level of assurance with respect to designer understanding of IPC procedures required, including evidence within the PSCP Stage 4 Draft Contract which referenced the need for staff to be conversant with the requirements of the HAI-SCRIBE. Requirements were also outlined in the technical briefing documents and briefly referenced within the Health & Safety Manual requirements. There was no apparent evidence to demonstrate that relevant staff within the designer's or contractor's organisations have been provided with clear guidance with respect to roles and responsibilities or with relevant education in IPC. A review of the HAI-SCRIBE also identified gaps between the mechanical and electrical design principles and topics recorded within the HAI-SCRIBE.		

Workbook Ref No.	Areas to probe	Evidence expected
7.4	How does the Health Board assure itself that equipment being proposed meets the required IPC standards?	The IPC Team are involved and IPC advice followed in all procurement decisions for new equipment prior to purchase. IPCT are satisfied that all equipment purchased can be decontaminated safely in line with National Guidance and manufacturers' instructions.
NHS Scotland Assure Observations: Whilst verbal assurance was provided through the KSAR workshops that fixtures and fittings will be procured through national processes, no supporting evidence was provided in this respect. NHS A&A intimated during the KSAR workshops that a formal control process was being developed for the next stage of the project.		

Workbook Ref No.	Areas to probe	Evidence expected
7.5	Evaluation of the Health Boards planned preventative maintenance (PPM) proposals for equipment issues and the Built Environment in relation to IPC issues.	• Has the Health Board considered how they will undertake assessment of and report cleanliness of the proposed facility and equipment within the healthcare environment, this is inclusive of planned programmes of maintenance? • Does the Health Board plan to seek feedback from patients, staff and visitors for their views? • Is it clear how the work for this project will interface with the Health Board existing arrangements for management of the IPC in the Built Environment in the wider estate?

NHS Scotland Assure Observations:

NHS A&A intimated that PPM activities were still to be fully developed. NHS A&A stated the outline of the processes will be derived from existing Board processes and tailored to reflect the requirements of the patient cohort. At this stage there was no auditable evidence submitted.

No evidence was provided in respect to seeking feedback from service users or others, however NHS A&A did note that prior to and following the facility moving into the operational phase that policies and procedures will be reviewed based on the patient cohort and reflective of any particular patient requirements

Similarly, a level of verbal assurance was provided through the KSAR workshops regarding incorporation of the new unit into IPCT work plan, however no documentary evidence was provided by NHS A&A.

Through the KSAR workshops, a level of assurance was provided that NHS A&A are sighted on requirements and it is important that these are formally documented during subsequent phases of the project.

3.7.2 Infection Prevention & Control Built Environment: Further Observations

In addition to the points raised via the KSAR workbook above, we also include the following observations as a result of the review, all of which relate to the evidence presented during the audit.

3.7.2.1	There are no clinical hand-wash basins in patient accommodation (the recommendation in SHFN 30 Part B is for one 1 HWB or hand rub dispenser to 4-6 beds in mental health units). Whilst NHS A&A noted in the KSAR workshops this had been discussed with the clinical and IPC teams, there was no supporting evidence provided as part of the NHS A&A KSAR response to document this. The Board needs to ensure that they have evidence for, mitigation for lack of hand wash basins; outbreak management; isolation or segregation of patients with an infection of concern or risk to other residents; and hand hygiene training for staff.
3.7.2.2	Following a review of the 1:50 room layouts, the KSAR has identified a potential risk of splashing from the hand wash basin in the clinical treatment room onto

	the surfaces of nearby trolleys, with an associated risk of transmission of waterborne infection. There was no evidence provided by NHS A&A as part of the KSAR response to demonstrate that the placement and the need for any mitigation such as splash guards had been reviewed with all stakeholders.
3.7.2.3	SHFN 30 Part B lists the personnel that should be involved to ensure the successful use of HAI-SCRIBE. Whilst NHS Scotland Assure was provided with verbal assurance that key stakeholders have been involved there was a lack of documented supporting evidence in this respect.
3.7.2.4	To ensure food safety, hot food delivered to the unit will need to be transported and held in such a way that its temperature is maintained at 63°C or above. NHS A&A noted that procedures for this were still to be developed and would be derived from from SOPs and modified based on individual patient needs, but the Health Board needs to establish evidence of the governance around this process.
3.7.2.5	Whilst vermin control measures are described within the project documentation provided, there is a lack of detail as to the proposed strategies (for example anti-vermin mesh for louvres within section 2.14.1.6 of the mechanical specification is noted but is missing reference to mesh size as stated in SHTM 03-01 Part A). It is also unclear to what extent the proposed measures have been reviewed by the NHS A&A stakeholders, including IPC. The HAI-SCRIBE does make reference to the relevant question set, but again lacks supporting details to demonstrate all risks and mitigations have been reviewed
3.7.2.6	The NSAIS facility is being constructed on an existing site. The PSCP as part of the technical workshops acknowledged that procedures for minimising the risks to adjacent buildings on the site were still to be finalised, including dust and noise provisions. There was no supporting evidence at this stage to demonstrate that the Health Board had documented the risks to patients elsewhere on the hospital site and their plans for monitoring and mitigation of such risks, e.g. particulate counts; dust control measures.
3.7.2.7	The project HAI-SCRIBE is not fully reflective of the proposed MEP access & maintenance strategy. For example the access & maintenance strategy notes the use of scissor lifts as part of the plant replacement strategy – these are not referenced in the HAI-SCRIBE."

4. Appendices

Appendix 1: Glossary

Please refer to NHS Scotland Assure – Assurance Service Master Glossary document available to download from NHS National Services Scotland website

[redacted]